AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

Circulating Wherever Dyestuffs are Used

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Vat Dyes to Be Made in U. S.

CLASS OF COAL-TAR COLORS THAT HAVE DEFIED AMERICAN EFFORT WILL BE AVAILABLE THROUGH LICENSING OF MANUFACTURERS TO OPERATE UNDER GERMAN PATENTS — WILL ROUND OUR AMERICAN DYE INDUSTRY — INDIGO WILL BE MADE BY PROCESSES DEVELOPED HERE.

American-made vat dyes on the market within a few months is the prediction of the trade as a result of the enactment of the Trading With the Enemy Law, which makes available to manufacturers of the United States under license German dye and chemical patents estimated at above 3,000 in number.

For the better part of three years leading chemists of the nation have devoted their efforts to the establishment of a self-contained dye industry here. An adequate supply of capital and equipment has been at their disposal, but so far they have found it impossible to produce in the United States that class of colors known as vat dyes. These are stated by dye experts to be the fastest colors made and are employed very extensively in dyeing cotton goods of all kinds. Their fastness makes them particularly desirable for goods that are laundered frequently.

"The vat dyes are by all odds the most important covered by German patents in this country," said the vice-president of a well-known manufacturing plant. "There are comparatively few aniline dyes patented here which are not already made in American plants. American manufacturers have not been able to make any progress in turning out vat dyes, however, and the German patents which will shortly be available through the issuance of licenses will be of tremendous advantage in building up a well rounded out dye industry."

Licenses for Term of Patent

The National Aniline and Chemical Company was among the first to put in an application for the use of German patents, most of the licenses asked for concerning vat dyes.

"I understand that the Government's attitude toward the dye industry is very favorable," he continued, "and do not believe that any difficulty will be experienced in obtaining the licenses. I have no information as to the terms for which the licenses will be granted, but expect that they will be for the duration of the patent, the German owners to be compensated as the Government sees fit. To operate under the patents will require the expenditure of considerable capital and effort. and it would not pay American manufacturers to enter into the production of the articles patented merely temporarily. They must have some assurance of protection for the future."

It was explained that the basis of the vat dyes was a coal tar derivative that was in plentiful supply here, but that a new plant and equipment would be required for their manufacture. The construction of the plant would take some time so that vat dyes could hardly be placed on the market for several months. American producers have been hard pressed during recent months and were beginning to view the situation in this particular field with increasing pessi-

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Correspondence invited

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mism. But now with the patent rights available for use, and with capital at the disposal of concerns manufacturing dyes, they will be able to make great strides in production.

Market Value of American Product

"The entrance of the Du Pont Powder Company into the field to assist those other companies already established should mean much to the trade. With their resources and skilled chemists they should be able to do much for the cause. There is one point which I wish that you would stress in connection with the subject of dyes. The consumer who casually reads the newspapers may easily gain the impression that with increased production and increased facilities dyes can now be sold at lower figures.

"This idea is incorrect. I can see no falling off in the prices that will obtain in dyes for a considerable period. You see, the overhead charges which manufacturers have to face prohibit any such decrease in price. Take, for instance, the production of black. There are so many items which enter into the manufacture of this color that no one conversant with the condition of the industry can possibly hope for a reduction in prices. Many of the items which are used in the production of this color are also necessary to the production of powder and other explosives. You can go down the lists of items which enter into the production of both explosives and certain dyes and you will be able to check up many of these items on both lists.

"An item which must be figured in every branch of industry at the present time is the increased cost of labor. From a mere casual reference to be cited in raising the price of a commodity, it has come now to be a vital factor in the determination of the price of every commodity. Labor is high, and it is so because of the increased cost of living. In order to provide for efficient service on the part of the laborer, manufacturers must pay their employes wages which will enable them to maintain a livelihood.

"Much of the profit which has been realized by different concerns has been turned back for the purpose of enlarging the plant and providing for the increased business that the demands of the war have made upon every industry. These are some of the factors which manufacturers have been forced to consider since 1914. The announcement that we are going to be able to make use of the German patent rights at least for the duration of the war is naturally hailed by manufacturers as a prediction that there are better times ahead for the trade."

Market for Vat Dyes

Attention was directed to the fact that the law provided for the issuance of (1) exclusive licenses and (2) general licenses, i. e., licenses which would not prevent the granting of licenses to other manufacturers to operate under the same patent.

"I do not think that the Government will discriminate in favor of any particular interests in the case of the dyestuffs industry and I doubt that the granting of exclusive licenses would be desirable. There is a broad enough field for all competitors. Particularly is this true of the vat dyes, for which there will unquestionably be a wide market. The number of applications to operate under these patents will be limited, principally because the development of the processes will involve a comparatively large investment."

Synthetic indigo, which is generally classed with the vat dyes and, before the war, was manufactured exclusively in Germany, is already being produced here in commercial quantities, although not in amounts nearly sufficient to meet the demand. It is announced that The National Aniline and Chemical Company will place synthetic indigo on the market next year, manufactured by an American process, and that the Du Pont interests have also developed a process independent of the German patent which will be employed to put American indigo on the market. The Dow Chemical Company already is manufacturing synthetic indigo here.

Indigo Made Here

"Our costs figure out approximately the same as the German costs. The final test will, of course, come only when we are turning out indigo on a commercial scale. But the indigo situation appears already to be fairly well in hand, and it

is unlikely that the German patent will be employed as extensively as those on the general list of vat dyes.

"The addition of vat dyes to the line of colors made in America will insure a complete dye industry here. Aniline colors are now manufactured in the United States as good, if not better, in quality as those imported from Germany before the war, and the range of colors and shades is generally regarded as satisfactory. Production has reached a point where American requirements can be handled without much difficulty, and in certain lines a state of overproduction exists."

Through the use of German patents Great Britain has established since 1914 a successful vat dye industry, producing colors that fully come up to standard. Recent reports show that it will be a matter of only a short time before British manufacturers will be able to produce vat dyes in sufficient amount to meet all the requirements of their market.—*The Journal of Commerce, November* 9.

Dyestuffs Absorb Moisture

American manufacturers of dyestuffs should remember that when a freshly made dye is packed immediately after drying, it has the capacity for absorbing upwards of ten per cent of moisture from the air. Samples put into glass stoppered bottles may remain quite dry and the shipment later may have a chance to recover its moisture. This has the same result as reducing with salt and a test will show it weaker than the carefully preserved sample. This may explain some incidents that once were hard to understand.

Navy Test for Blue Cloth

The U. S. Navy requires that blue cloth stand a test of one hour at 180° F. with a 1% solution of Navy salt water soap without bleeding into white union goods. This is a very severe requirement but one American product, a blue on a chrome mordant, is standing nearly as well as Indigo dyed in the vat.

Notes of the Trade

The Bayre Company, Incorporated, of Rensselaer, N. Y., is to erect several coal pockets on its land along the Hudson River. This is made necessary by difficulties they have experienced in securing coal by rail. This contract has already been awarded and when the buildings are completed, the company will be able to secure its coal supply by water. We are informed that the company contemplates the addition of new buildings in the Spring.

In the Kansas University of Kansas City, experiments are in progress on coal tar from coal that is mined in that vicinity. If the experiments prove successful, it may mean that a local industry may be established in that locality.

The Commonwealth Chemical Corporation, 1500 Garden Street, Hoboken, N. J., manufacturers of chemicals and kindred products, is planning for the construction of a new one-story reinforced-concrete laboratory building at its plant.

The Farben-Fabriken of Elberfeld Co., dyes and pharmaceuticals, has been incorporated under New York State Laws, with an active capital of $100,000. The incorporaters are: G. A. Reiss, W. F. McDermott and T. M. McDermott.

Charter has been granted to the Niasco Chemical Co., Trenton, N. J., with a capital of $250,000 to manufacture chemicals. The incorporaters are: Henry J. Camby, R. E. Hetel, F. Frankenhoff, Hoboken, N. J.

It is reported in the market that good sized quantities of domestic chemicals and dyestuffs have been purchased during the last few months of French and Italian account, to be shipped after the war.

Inquiry Department

In the establishment of this department it is our desire to help the consumer in buying his products direct from the manufacturer or reliable dealer. Accordingly all questions relative to source of supply will be answered to the best of our ability in an impartial way.

Furthermore, we propose to help in any difficulties that consumers may be having with dyes and chemical products providing that questions do not involve simply tests, which can be readily obtained from those who specialize in such work.

We hope that the consumer will not hesitate in making use of the department for all questions relative to processes, etc., will receive the personal attention of a chemist who is fully qualified to handle the subject.

Question—What class of dyes are used for dyeing embroidery silk so it will be fast to washing?

Answer—If fastness to washing is the only requisite, many dyers use simply direct cotton colors dyed with a little Acetic Acid. Under these conditions, the shades are both brighter and faster than the same dye on cotton. Then the second class of colors are the developing dyes—Primuline, Diago Blues and Scarlets, also Browns and Blacks. For the very best work, the Vat dyes may be used but the expense of dyeing is the main factor to be considered. It is not practical to use Alizarine or After-Chrome dyes on silk on account of the destructive action of the chrome on the fibre.

Question—When Direct Black in a standing kettle for cotton dyeing has become reddish and will not give a good shade even when sal-soda is added, what can be done to correct the bath?

Answer—The best remedy is to pull the plug and let it run into the sewer. Some Direct Black contains a reddish by-product which does not dye as rapidly as the true color and this is likely to accumulate in the standing kettle. Ordinary Direct Black turns reddish on account of acidity and can be restored by the addition of soda, but the reddish by-product is unaffected and in time accumulates to such an extent that the cotton retains it and the shade of the dyeing is spoiled. The value of the color in the bath is less than that of the cotton, so it is better to start a fresh bath whenever this condition becomes troublesome.

Question—How can Sulphur Acid Blues and Sulphocyanine be dyed evenly on wool?

Answer—By using very little Acetic Acid and Glauber Salt and raising the temperature slowly, but if this cannot be controlled easily, it is best to use Acetate of Ammonia only with the dye. The heating of the bath slowly liberates the acid and the dye is fixed slowly and consequently evenly. Dyes of this class are the most troublesome to dye evenly, but their great strength and good fastness have made them popular.

Question—What is the proper manner to dye basic dyes on cotton yarn; should they be done cold or is a hot bath desirable? Also why do many not penetrate the yarn?

Answer—The dyeing of basic colors on cotton depends very much on the skill and judgment of the dyer as well as on

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302 Broadway, N. Y.

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Agents for Essex Aniline Co.

the quality of the dye. The more careful dyers first stir the dye with cold water and a little Acetic Acid and then add boiling water. In case there are any insoluble particles after a reasonable amount of stirring the solution should be run through a cheesecloth strainer. The yarn has previously been prepared with Tannic Acid (about 5% for medium shades) and fixed with Tartar Emetic in slight excess then thoroughly washed. The dyeing may be started about 140° F. In this case of Amamine, it must never exceed this temperature. In all cases the addition of 5% of Alum will promote even dyeing on account of its slight acidity. If the dyeing is conducted at not over 170° the shade will be fuller, but if raised to a boil, the penetration will be better, the bath will be more exhausted and there will be less tendency to rub. Dyeing which penetrates poorly and rub badly generally have too much tannin mordant for the amount of dye and conversely if they have too little mordant will not exhaust the bath.

Question—What dyestuffs are suitable for coloring cold water paints made from white mineral substances and casein such as are used for wall coverings?

Answer—So far no dyestuffs have been found available for this purpose for two reasons. In order to render the casein soluble, the materials always contain strong alkalies which act destructively on most coloring matters and secondly because none of the dyes which would be cheap enough to be used for this work are fast enough to light. A dye well combined with a mordant or a textile fibre may possess a good fastness to light, but when used in a free condition loses much of its fastness. This is true in all cases where dyes are used as stains and no way has ever been found to overcome the difficulty. In such cases, manufacturers have been forced to use mineral colors or chemical precipitates such as are used for paints and even in pre-war-times nothing in the line of artificial dyestuffs could compete for cheapness and durability.

(*Continued on page* 9)

England Claims Expansion of Her Dye Industry

MANY NEW PLANTS BEING CONSTRUCTED ACCORDING TO A RECENT REPORT OF THE BOARD OF DIRECTORS OF BRITISH DYES, LTD.

"The production of dyes continues to be limited by the shortage of certain materials, but notwithstanding this the supply throughout the year has been increased, and the variety of dyes extended. An extensive plant for the production of Azo colors has been completed, and is now in operation. The range of direct cotton colors has been supplemented by the inclusion of a yellow, violet and green. The supply of wool colors of this type has been enlarged. The production of methylene blue has been largely increased, and the output of mordant colors of the type of khaki yellow, green and brown is now sufficient to meet the demands made upon the company for dyestuffs used in the manufacture of the varied clothing equipment of our own and allied troops. Among the vat dyes of the indanthrene type a blue and yellow are being produced. It is hoped shortly to extend the range of these colors.

A New Color Now Being Produced Which Is Similar To Alizarine Blue

"The company has produced a color similar to the alizarine blue dyestuff for wool of exceptional fastness to the action of light. The requirements of the Government for dyes for a variety of military purposes have been fully met, and this demand has to some extent necessarily interfered with the regularity of supplies to the trade. Important installations for the manufacture of intermediate products, including paranitraniline and betanaphthol have been completed. Plants for the manufacture of other products are being proceeded with as rapidly as possible, and as these come into operation they will provide materials from which the variety as well as the quantity of colors manufactured can be augmented.

"In addition to the plant referred to the following important work, as well as much minor work, has been carried out: (1) The construction of the works railway and its branches has been well ad-

vanced toward completion. (2) A number of large new sheds for the manufacture of intermediate products and colors have been completed. (3) The electrical installation has been completed and both the old and the new works are now entirely operated by the companys' own plant. (4) A power gas plant has been completed and is in operation. (5) A water service reservoir, with a capacity of 2,000,000 gallons, has been constructed. (6) A pipe system for the distribution of gas, steam and compressed air throughout the works is approaching completion.

"The work of the Research Department has received a great deal of attention during the year and increased facilities for laboratory and experimental work have been provided. As soon as arrangements can be made for the supply of labor and materials, the construction of the main Research Laboratory at Huddersfield will be commenced, the plans having already been prepared. In the mean time research work on behalf of the company is being carried on at the Universities of Oxford, Leeds and Liverpool.

Co-operation of Dye Manufacturing Plants

"The question of co-operation among dye manufacturers has been engaging the attention of the Board of Trade throughout the year, but they have not yet taken any definite steps in this direction. The directors have throughout maintained the attitude that they will welcome any tangible proposals for co-operation with other manufacturers, provided that the interests of the textile and other industries dependent on the supply of dyes are safeguarded and that the co-operation can be carried into effect in a manner consistent with the object for which the company was established.

"The directors would again emphasize the fact that before dye-making can be established as a national industry in this country it is necessary to erect plants to manufacture intermediate products, and the provision of plant for this purpose has largely devolved on the company. While a great deal has been accomplished, with limited means and under difficult conditions, in producing dyes to satisfy immediate needs and in laying the foundations of the industry, it should be clearly recognized that not much more than a beginning has been effected up to the present, and great efforts have yet to be made. The supply of materials, plant, labor, qualified chemists, and of capital must be very largely increased.

"The need for the employment of greatly increased capital is emphasized by the fact that the recently published accounts of five of the German dye manufacturing firms show assets which amount in aggregate to upward of £35,000,000 sterling, including cash resources of approximately £10,000,000 sterling.

"The issued share and loan capital of the company as of April 30, 1917, consisted of: Share capital subscribed (942,069 shares of £1 each, 15s per share called up), £942,069; loan from Government, £1,142,069, making a total of £2,084,138.

"The directors report that they feel justified in recommending the payment of a dividend at the rate of 6 per cent per annum, which is the maximum amount allowed."

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Our Policy

We wish to have it understood that the AMERICAN DYESTUFF REPORTER is not a house organ for any particular company or companies and that it is maintained solely for the purpose of reporting conditions in the Dyestuff & Chemical Industry.

If there is any reference to any particular company or member of any company in our articles, this reference is given only to show that the article is authentic and is not done for the purpose of advertising.

We hope to do our share to help this industry in reaching a state of permanency.

We do not discourage dealing with reliable selling agents, but we do take the stand against those who are not reliable, for in this way only can we make the REPORTER of value to you as a consumer. We have been criticised for this stand and expect to be criticised more in the future, but we have the satisfaction of knowing that this expression of disapproval does not come from reliable companies.

We are told that the trade knows conditions and that we are making a mistake in thus digressing from the conventional. Do you as a consumer feel that we should change our policy?

When we established the REPORTER we set for ourselves the following rules of conduct:

1. To print only information which is in every respect reliable.

2. To avoid misrepresentation and exaggeration in every form.

3. To avoid recommending or endorsing in our editorial columns the goods of any particular manufacturer.

4. To avoid advertising individuals or firms under the guise of special articles.

5. To expose and combat all questionable practices in the trade and those who practice them.

6. To accept advertising only from actual manufacturers of known reliability or from dealers whose financial resources and business records guarantee satisfactory performance of contracts made.

7. To furnish consumers with authentic reports of the latest developments in the field of dyestuffs, colors and allied chemicals.

8. To assist consumers to the extent of our ability in securing reliable and unbiased information upon any questions in regard to which they may consult us.

We believe that careful adherence to these precepts will gain for the AMERICAN DYESTUFF REPORTER the confidence and trust of the trade at large. We know that only if it enjoys such confidence can it hope to be helpful to the industry or profitable to its publishers.

We have issued six numbers of the REPORTER and now we want an expression from our readers regarding our efforts to make good this policy.

We have the co-operation of the reliable manufacturer and with your expression as a guide to policy we can and hope to make the AMERICAN DYESTUFF REPORTER a weekly publication that is not just another magazine in the field, but a publication of real benefit to the manufacturer, consumer and the industry.

Release of Vat Dye Patents Is Welcomed by Finishing Houses

Cotton men yesterday expressed unqualified enthusiasm concerning the prospect of obtaining German patent rights for the manufacture of vat dyes. The supply of German dyes which was in this country at the outbreak of the war has been carefully and judiciously used, it was said, and the announcement of permission to use the patent rights on these products was welcomed the more eagerly in view of the fact that the available supply has been almost exhausted. The recent ruling by the authorities at Washington has caused manufacturers of cotton cloth to view the coming year with confidence. In commenting upon the outlook in this particular branch of industry an official of an important finishing concern said yesterday to a member of the *Journal of Commerce:*

"We are about at the end of our resourcefulness in the matter of vat dyes. We bought up all the available supply that we were able to locate as soon as war was declared in 1914. Of course, everyone realized that there would be no further supply since Germany had withdrawn from the worlds commerce, and there was a rush to secure the largest possible amount of the dyes. No one could foresee just how long the war would last, but the consensus of opinion pointed to a much shorter period than actual facts have shown.

"During the three years since the outbreak of the war, American ingenuity has been sorely taxed in the matter of making up the deficit created by Germany's withdrawal. It has been only within recent months that the situation has improved. New money has been invested in various new concerns, and houses that have been running for a considerable length of time have been aided by new capital. The result has been a gradual and steady improvement in the situation as a whole.

"Vat dyes have not as yet been produced in this country. The recent decision by the Government will pave the way for the building up of this new industry. There is an abundance of capital, and with this new field of possibilities open to us we can proceed to manufacture these dyes. The situation will be relieved gradually. The making of vat dyes is an involved process. It requires an abundance of both time and skill. This kind of dye is used exclusively in goods where the color must be proof against frequent wash and intense light.

"Cotton goods colors are only fast when they have been put through the vat dyeing process. This dye is used for shirtings and wash goods. Needless to say, the war has brought about an increasing demand for this product. This is due to the inability of manufacturers and finishers to import it from Germany.

Inquiry Department

(*Continued from page* 6)

Question—I bought a dye advertised and labelled "Fast Yellow," but find that it is not fast in any way. Would this be considered a fraud or is the name not to be regarded as a guarantee of quality?

Answer—If you have access to any foreign sample cards, you will find on all of them under the dyeing formulæ and specifications the words "ohne garantie" —"without guarantee." No dyes were ever sold as guaranteed to even produce the shades their names indicated, much less to have any particular fastness. The names of dyestuffs are less descriptive of of the character of the goods than any names used in trade. As each new color was discovered, it had given to it by various manufacturers a number of names among which the adjectives "New," "Fast," "Solide," "Echt" and others of like character were used lavishly. Later developments have made the names simply ridiculous, but they still remain, and consumers have long since realized that the true estimate of any dye lies not in its name but in its actual qualities. We doubt whether, in the view of the established customs of the business, you could prove a case against a dealer who had used a name that was misleading when you had a full opportunity of ascertaining beforehand whether the goods were desirable.

A Recent Patent Which Makes It Possible to Obtain Brown Shades With Aniline

A new process, lately patented, is said to enable one to obtain a series of brown shades, based on the discovery that by oxidizing salts of aniline, or its homologues, in which there is an aromatic hydroxy body containing no nitro, nitroso or animo group, such as phenol, a general reaction takes place by which brownish shades are formed. The process is explained by means of the following two examples:

(1) Impregnate the fabric with a hot solution of a mixture of a 10 per cent solution of aniline salt, and a 10 per cent solution of phenol. Develop by an acidulated bichrome bath in the usual manner for aniline salts without the phenolic body, using sufficient proportions to obtain the desired result. A typical bath would contain 22 lbs. hydrochloric acid of 32 deg. Tw., 14 lbs. bichromate of soda and 200 gallons water.

(2) A textile fabric mordanted in the above bath is boiled in a mixture of, say 10 lbs. aniline salt and a similar amount of resorcinol dissolved in 200 gallons water. The temperature is gradually raised and the liquid boiled for half an hour, until the shade is developed.

Spring Textile Exhibition

Will Include All Classes Of Machinery and Fabrics

The 1918 spring exhibition, to be held at the Grand Central Palace, in New York City, under the auspices of the Textile Exhibitors' Association, bids fair to exceed the sanguine expectations of the management. The Merchants' Association of New York is co-operating in the formation of a representative co-operating committee which shall select suitable headquarters for the visitors from foreign countries, who are expected to attend in large numbers, as it will give them an opportunity of finding under one roof a representative display of American textile machinery from all the different branches of the industry.

Foreign Trade Inquiry

An agency is desired by a firm in Brazil for the sale of industrial chemicals, caustic soda, soda ash, acetic acid suitable for the textile and soap industries, and all kinds of dyes suitable for cotton textile industry. All business is desired on a commission basis. Cash will be paid. Shipments are preferred through some reputable export house which understands documentation for Brazil. Correspondence may be in English.

Particulars can be had from the Reporter.

Dyestuffs are now tested for fastness to light not by being hung on the roof for several days, but by being exposed to Ultra Violet rays for an equal number of hours. The U. S. Government recognizes the test as a fair substitute and a great saver of time.

Dyestuffs and Chemicals That Are Actually Obtainable

We suggest to our readers that they carefully preserve these lists, as in their complete form they will give a full and accurate record of the sources of supply of all dyestuffs and chemicals manufactured or handled by reputable American companies.

Owing to the number of companies who are now concentrating on Khaki, this list will include only the colors that are being manufactured at this time.

The following is taken from the first four issues of the American Dyestuff Reporter and shows in full the colors listed in each weekly issue.

We have been criticised and congratulated upon this policy and in view of the fact that the majority are in favor of its continuance, you will see each week a list of colors made by, or sold by, manufacturers who are handling the best products obtainable.

We will be glad to list any manufacturers or selling agents who are known to be reliable.

Any enormous listings can be corrected only with your assistance and we ask you to co-operate with us accordingly.

NATIONAL ANILINE & CHEMICAL COMPANY, INC.

244 Madison Ave., New York

Aniline Colors

Direct colors: for cotton, union goods, etc.:

Erie Black Gxoo
Niagara Blue 2B
Niagara Dark Blue 3R
Niagara Blue DB
Ammaco Direct Blue 3B
Erie Brown C
Erie Brown GR
Direct Brown T
Erie Green WT
Ammaco Direct Green WB
Erie Green MT
Erie Orange
Benzo Purpurine 4B W
Congo Red 4B
Niagara Garnet R
Ammaco Primuline WB
Niagara Violet BW
Niagara Fast Yellow F
Niagara Yellow KM
Ammaco Chloramine Yellow WB
Ammaco Delta Red 2B

Sulphur Colors

For cotton, fast to washing, crossdyeing, etc.:

Sulphur Black F Conc Paste
Sulphur Black Sap Powder
Sulphur Blue Paste
Sulphur Blue Sap
Sulphur Direct Navy Blue
Sulphur Brown 2G
Sulphur Brown Sap
Sulphur Brown WF
Sulphur Brown LY Conc
Sulphur Green Sap
Sulphur Yellow BW
Sulphur Khaki all Shades

Acid Colors

For wool, silk, leather, lake making, etc.;

Buffalo Black NBR
Buffalo Black 10B
Buffalo Black 8B
Buffalo Black 3G
Buffalo Black RB
Ammaco Acid Black TR
Buffalo Black AR
Acid Black 4A B
Buffalo Fast Blue R
Buffalo Cyanone 3R
Induline
Resorcine Brown
Fast Brown
Ammaco Acid Green L
Orange A Conc
Orange S Conc
Orange 2G Crystals
Brilliant Scarlet 3R
Xylidine Scarlet
Fast Red S Conc
Scarlet BR
Azo Rubine Extra
Buffalo Fast Crimson R
Azo Bordeaux
Buffalo Fast Fuchsine D
Buffalo Fast Fuchsine G
Buffalo Fast Fuchsine R
Buffalo Fast Fuchsine 6B
Wool Red 40F
Cloth Red G
Cloth Red R
Croceine Scarlet Moo
Lanacyl Violet M
Acid Violet
Buffalo Violet 4B
Buffalo Fast Violet B
Wool Yellow Ex Conc
Azo Yellow A 5W
Metanil Yellow 1955

Chrome Colors

For wool, fast to light, fulling, etc.:

Buffalo Chrome Black 2B N
Ammaco Chrome Black BN
Alizarol Black 3G
Alizarine Blue G
Alizarine Dark Blue GN (*Suitable for Navy*)
Alizarine Dark Blue RBN
Alizarine Bright Blue 3R YN
Serichrome Blue R
Alizarol Brown B
Alizarol Brown RB
Buffalo Chrome Green CB
Serichrome Green B
Ammaco Alizarine Orange WB
Ammaco Alizarine Yellow 331
Alizarol Yellow 3G

Basic Colors

For leather, paper, lake making, cotton printing, etc.:

Brush Blacks
Methylene Blue BS Conc
Ammaco Basic Navy Blue DA Conc
Bismark Brown Y Ex.
Bismark Brown 53
Ammaco Victoria Green WB
Chrysoidine Y Ex.
Chrysoidine 3R
Safranine A
Ammaco Safranine BL
Methyl Violet

Aniline Colors—Miscellaneous

Nigrosines
  Water soluble, blue and jet shade
  Spirit soluble, blue and jet shade
Oil Blacks
Chrysoidine Base
Victoria Green Base
Oil Colors
Fur Black
Fur Brown

Coal Tar Chemicals

The Company is manufacturing a number of coal-tar chemicals, which are used in textile or other industries; among which are the following:

Aniline Oil
Aniline Salt
Beta Naphthol
Dinitro Phenol
Diphenylamine
Dimethyl Aniline
Hydroquinone
Meta Phenylene Diamine
Meta Toluylene Diamine
Nitro Benzol
Paranitraniline
Paramidophenol
Para Phenylene Diamine
Resorcin
Thiocarbaniline
Thiocarbtoluide
Thiocarbxylide

Intermediates

Among the intermediates manufactured by the Company are the following:

Amido Salicylic Acid
Benzidine
Chromotrop Acid
Dinitro Benzol
Dinitro Toluol
G Salt
H Acid
Koch Acid
Metanilic Acid
N W Acid
Naphthol Sulphonic Acid (1:5)
Ortho Toluidine
Phenyl Hydrazine Sulphonic Acid
Paramido Acetanilide
Phenyl Acid
Picarmic Acid
Pseudo Cumidine
R Salt
Sulphanilic Acid
Schaeffer Salt
Xylidine

Barium Products

These are manufactured by the Rollin Chemical Co. and among those regularly produced are:

Barium Chloride
Barium Carbonate
Barium Chlodire
Barium Nitrate
Barium Sulphate

Other products of this factory are:

Sodium Sulphide Conc
Caustic Soda

Textile Specialties

The Company also manufactures a full line of:

Textile Gums
Liquid Softeners
Sylphonated Oils, Single and Double
Soluble Starch

Gums

Arabic
Ghatti
Guaiac
Indian
Karaya
Mastic
Olibanum
Senegal
Tragacanth

Oils, Softeners and Finishers

Turkey Red Oil 85% and 50%
Tetrol
Sulphonated Corn Oil 85%
Softener No. 6, 8A
Nainsook Softener
Concen Size
Softener T
Soluble Tallow
Vegetable Tallow
Rosin Size
Ricinola Oil No. 50
Gelose
Para Soap

IMPERIAL COLOR WORKS, INC.

1328 Broadway, New York

Prussian Blues
Milori Blues
Bronze Blues
Chrome Yellows
Chrome Greens
Para Toners and Lakes
Toluidine Toners and Lakes
Scarlet Lakes
Violet Lakes
Blue Lakes
Green Lakes
Red Lakes
Logwood Extract
Logwood Crystals
Hematine Crystals
Hematine Extract
Fustic Extract
Fustic Crystals
Hypermic
Wool and Leather Yellows

BINNEY & SMITH CO.

81 Fulton St., New York

Products of The Meth-o-lene Co., Inc.

Methylene Blue
Methylene Green
Methyl Violet 2B

DICKS, DAVID CO.

302 Broadway, New York

Methyl Violet IS
Methyl Violet 4BX
Methyl Violet 6B
Sulphur Brown
Sulphur Black
Direct Blue
Direct Green
Alizarin Yellow
Mikado Yellow
Stilbene Yellow
Fuchsine
Magenta
Khaki
Solube Water Blue

THE CALCO CHEMICAL CO.

Woolworth Building, New York

Intermediates

Nitro Benzol, Commercial
Nitro Benzol, Redistilled (Oil of Myrbane)
Aniline Oil
Aniline Salt
Dimethylaniline
Dinitro Benzol
Metaphenylenediamine
Beta Napthol
Sulphanilic Acid
Naphthionic Acid
Nitro Zylol
Xylidine
Paranitraniline

Dyestuffs

Acid Colors

Scarlet 2R
Scarlet 2RX
Orange II
Bordeaux B
Crimson Y
Bordeaux 2BX
Tartrazine

Chrome Colors

Yellow
Orange
Green
Brown

Basic Colors

Methylene Blue
Methyl Violet

Direct Colors

Orange R
Maroon Red
Red
Chrysamine
Violet R

Lake Colors

Lake Scarlet 2R
Lake Scarlet 2RX
Acid Orange
Bordeaux B
Methylene Blue
Methyl Violet

ZOBEL COLOR WORKS

2nd Ave. and 9th St., Brooklyn, N. Y.

Methyl Violet
Methylene Blue
Malachite Green
Fuchsine (Majenta)
Bismarck Brown R and Y
Chrysoidin
Indigotine
Indigo (Paste and Extract)
Purple Lake
Scarlet Lake
Green Lake
Blue Lake
Orange Lake
Permanent Red
Persian Orange
Scarlet Pulp
Cutch Extract
Nigrosine Jet and Blue
Indaline
Silk Blue
Congo Red
Sulphur Black

MARDEN ORTH HASTINGS CO.

61 Broadway, New York

Logwood Chips, Oxidized & Unoxidized
Logwood Extract
Hematine Extract
Hematine Crystals
Fustic Extract
Fustic Extract A
Aurantine Powder
Aurantine Paste
Quercitron Extract
Cutch Extract
Sumac Extract
W & S S Nigrosine, blue
W & S S Nigrosine, jet
Sulphur Brown
Fact Acid Red
Fast Red E
Orange II
Anthracene Acid Brown G
Alizarine Yellow RW
Ponceau 2G
Ponceau R
Croceine Scarlet
Croceine Orange
Amaranth A
Amaranth B
Direct Claret
Congo Rubine
Congo Red
Chrysamine G
Benzo Brown
Benzo Orange
Direct Green
Diamine Blue BB
Oil Mahogany No. 3052

Oil Yellow D
Oil Orange
Oil Scarlet
Oil Blue
Oil Green
Oil Red No. 3
Oil Red No. 4
Oil Black, jet and blue shades

A. K. KLIPSTEIN & CO.
644 Greenwich St., New York

Acid Dyes

Indigo Extract BF
(made from Synthetic Indigo)
Induline AK
Azo Rubine
Brilliant Scarlet
Croceine Scarlet
Amaranth
Acid Wool Orange Paste
Acid Wool Yellow Paste
Victoria Blue B
Wool Green S

Basic Dyes

New Fast Blue RS
Patent Phosphine GG
Methylene Blue O Concentrated
Methyl Violet KA
Auramine O
Rhodamine B Extra
Rhodamine 6G Extra
Malachite Green AK

Chrome Colors

Gallocyanine 20% Paste
Flag Blue
Chrome Fast Black PWRL Concentrated
Chrome Fast Yellow G
Chrome Fast Yellow O

Direct Colors

Chrysophenine

Sulphur Dyes

Alpha Black
Zeta Black
Sulphur Brown BF
Sulphur Cutch BF
Sulphur Khaki BFY
Sulphur Khaki BFB
Sulphur Green BF
Zeta Blue, Green Shade
Zeta Blue, Red Shade

Vegetable Dyes

Fustic Extract
Logwood Extract
Logwood Crystals
Hematin Crystals
Super Hematin
Sumac Extract
Colorless Sumac Extract
Quercitron Extract
Quadruple English Archil Extract

Fast Fat Dyes

These dyes are made expressly for us by the Society of Chemical Industry in Basle, Switzerland:

Ciba Synthetic Indigo 20% Paste
Ciba Blue 2B 51% Paste
Ciba Blue 2 BD 16% Paste
Ciba Violet B 10% Paste
Ciba Violet B 100% Powder
Ciba Blue Green Shade
Cibanon Olive B Paste

Intermediates

Nitro Toluol
Dinitro Toluol
Meta Toluylene Diamine
Diamine Developer C (Crystals)
Toluidine
Aniline Oil
Para Phenylene Diamine
Oxide of Iron

ARNOLD, HOFFMAN & CO., INC.
61 Broadway, New York

Products of Mathieson Alkali Works, Inc.

Soda Ash, 58% Light Dense
Soda Caustic, Solid & Ground
Soda Crystal Carbonate
Soda Virginia Non-caking
Soda Bicarbonate
Bleaching Powder
Liquid Chlorine
Caustic Soda, Solid & Stocks
Castner Electrolytic Process
70% Test, 99½ Pure

Products of Nitrogen Products Co.

Sodium Ferrocyanide
Sodium Ferricyanide
Sodium Cyanide, C. P.

Products of Anchor Color & Gum Works

Starch
Dextrine
Gums
Softeners
Oils & Sizings
Special Products for Textiles
Pure Pigment Colors
Indigo
Cutch & Indigo Extracts
Natural Gums

DYE PRODUCTS AND CHEMICALS CO., INC.
200 Fifth Ave., New York

Aniline Dyes

For Wool

Napthol Green
Newark Scarlet (*Biebrich*)

Ponceau Scarlet
Acid Yellow
Chrome Blue Black
Chrome Brown
Copper Purple

For Natural Silk

Chrysoidine
Napthol Green
Newark Scarlet (*Biebrich*)
Ponceau Scarlet
Acid Yellow
Eosine

For Artificial Silk and Cotton

Bismark Brown (*Red and Yellow Shades*)
Chrysoidine
Eosine

For Leather

Bismark Brown (*Red and Yellow Shades*)
Chrysoidine
Newark Scarlet (*Biebrich*)
Ponceau Scarlet

For Paper

Bismark Brown (*Red and Yellow Shades*)
Chrysoidine

ALLIANCE CHEMICAL CO.
176 Federal St., Boston, Mass.

Fast Chrome Red
Fast Chrome Green
Fast Chrome Yellow

J. S. YOUNG & CO.
Hanover, Pa.

Yellow, Blue and Black
Natural Dyestuff for Cotton, Wool and Silk

ATLANTIC DYESTUFF CO.
Burrage, Mass.

Sulphur Blacks
Sulphur Browns
Alizarine Yellow Powder
Alizarine Yellow Paste
Direct Blues
Direct Greens
Azo Fuchsine
Chrysamine

JOHN CAMPBELL & CO.
75 Hudson St., New York City

Black Ex. Conc. Silk White
Yellow C. Silk White
Brown 6 G
Brown B
Green C Silk White
Blue S. W. Silk White
Red B

Swiss Manufacture of Coal-Tar Products.

The manufacture of coal-tar dyes and medicinals in Switzerland is confined chiefly to the city of Basel. The four large companies in that city engaged in this branch report profits far in excess of any sums hitherto recorded. Thus the well-known Sandoz Color Works paid at the close of 1916 dividends of 25 per cent. and in addition a bonus of $200 per share. This was after granting a bonus of $80,000 to the working staff and setting aside ample sums for various funds.

These conditions are causing alarm in German manufacturing circles, especially when taken in connection with the existing embargo on the exportation of nearly all chemical and pharmaceutical products from the Empire. A German trade journal expresses openly the fear that "the world's markets have found new sources of chemical products, and will learn to do without those of German origin if exportation is not made easier as quick as possible."

ATLAS COLOR WORKS, Inc.

Manufacturers of

Indigotine
Natural and Synthetic
Indigo Extract
Indigo Paste
For Cotton

SALES OFFICE:
322 Ninth St., Brooklyn, N.Y.
WORKS:
Hamilton Ave. and Gowanus Canal
Brooklyn, N. Y.

National Aniline & Chemical Co., Inc.
244 Madison Avenue **New York**

THE LARGEST
MANUFACTURERS
OF
ANILINE COLORS
AND
COAL TAR PRODUCTS
IN AMERICA

BRANCH OFFICES:

BOSTON
PHILADELPHIA
CHICAGO
CINCINNATI
BUFFALO
HARTFORD
PROVIDENCE
CHARLOTTE
MILWAUKEE
MINNEAPOLIS
KANSAS CITY

FACTORIES:

BROOKLYN
BUFFALO
WAPPINGERS FALLS
MARCUS HOOK